IV. LAND USE ASSUMPTIONS

The Growth Management Act places a major importance on making the connection between land development and the planning for and provision of transportation facilities, both in the short term and in the long term. In the short term, it has the "concurrency" requirement where the transportation facilities must be planned for, or be in place concurrent with development. In the long term, future traffic forecasts must be based on the land use plan. In fact, a sub-element discussing the "land use assumptions used in estimating travel" is required for the transportation element. The purpose of this section is to fulfill this requirement.

Very briefly, the land use assumptions that went into the regional traffic forecasts for Skagit County correspond to the "urban communities and rural villages" development alternative which is discussed in the original Skagit County Environmental Impact Statement (EIS) for the Land Use Designation Element of the Comprehensive Plan. This alternative incorporates all of the urban development assumptions from the "urban centers" EIS alternative, including the population growth assumption of an 80%-20% split between urban growth areas and the remainder of the County. As one would expect, it also assumes that much of the rural population growth will be in the small, unincorporated communities or "rural villages." The total County-wide population growth assumed to take place in the 20 year planning horizon corresponds to the population forecasts done by Economic and Engineering Services (EES).

Initiated in conjunction with the development of the EES forecasts was a process among the Cities and the County to distribute future population to the UGAs based on the emerging land use elements of the cities and on the preliminary UGA boundaries. Concurrent with that, the larger cities were developing traffic models for their Transportation Element work. The population and housing growth assumptions that went into these models were a best estimates based on where this population distribution process was at the time the models were developed. Obviously, some adjustments have been made since then in the refinement of the UGA boundaries since they had not yet been finalized. Population and related housing data that the cities and their consultants developed represent the starting point for the data development for the County-wide Traffic Model.

With respect to employment, data from the Washington State Employment Security Department was used for the base year. For employment growth, the employment forecasts developed for the city traffic models were used along with the County-wide employment forecasts developed by Ed Hovee for SCOG in the Development of the Overall Economic Development Plan (OEDP). It should be noted that the "urban communities and rural villages" alternative assumes that some of the County's industrial growth will take place at outside the cities' UGAs, but inside the Bayview "independent urban growth area" which includes Bayview Industrial and Business Park.

Subsequent to the land use work that went into the traffic modeling effort for the Transportation Systems Plan, two issues developed which could potentially impact the accuracy of the land use data. These issues related to the population forecasts used in future planning and to changes in the UGA boundaries. As it turned out, neither of these issues significantly impact the accuracy of the traffic modeling work that was completed.

In late 1994, the Growth Management Hearings Board ruled that Skagit County was out of compliance with GMA because it used the EES forecasts rather than the OFM forecasts in Comprehensive Plan development. At that time there was a huge discrepancy between the two population forecasts for Skagit County, with the OFM being much lower. The traffic modeling analysis used the figure of 137,421 for the EES forecast for 2014. This contrasted with the 1992 OFM forecast of 122,183 extrapolated for 2014, a 36% difference in projected growth from 1990. However, new OFM forecasts came out in early 1995 showing the 2014 population forecast figure at 135,169. This reduced the discrepancy between the EES and the OFM figures to less than a 3%. The potential problem of forecast inconsistency was solved when OFM changed its forecasts.

A. PROCESS

The process for putting together the land use data for the model, both base year and future forecasts, was rather complex. The traffic modeling process requires small geographic area data to be developed. In the Skagit County-wide Traffic Model, current data as well as future forecasts for housing units and employment had to be developed for each of the approximately 175 Traffic Analysis Zones (TAZs) included in the model.

For the Urban Growth Areas, the original idea was to simply merge all the land use data (both base year and future year) from the city models to produce the Urban Growth Area data for the County-wide model. Then, the only new data that would have to be developed would be that for the rural area. This required that the same data types, and preferably data sources, be used in each of the models. In addition, both geographic and temporal compatibility needed to be maintained or developed.

In order to achieve geographic compatibility between the cities' and the County's Traffic Analysis Zones, the County's TAZs were defined to be combinations of the TAZs from the cities' models. This made it possible to produce TAZ data for the County-wide model by merging data from the cities' models as discussed above. Despite the successful efforts at gaining geographic compatibility of the models, some adjustments in the land use data of the cities models were needed in order for a consistent county-wide data base to be developed for use in the county-wide traffic model. These

adjustments are briefly discussed below. Additional discussion on the employment adjustments is included in Appendix F .

The city traffic models also included land use forecasts. Since base year data for the cities was adjusted for the county-wide model, the forecasts for the cities also needed to be adjusted to reflect base year data adjustments. The basic assumption in making the adjustment of city forecasts was to apply the same growth rates that were included in these forecast and apply them to the adjusted base year data. Since the city forecasts were for a different future year than the regional forecasts (2010 and 2012 rather than 2014) the city forecasts were also factored up to year 2014 to secure temporal compatibility.

B. HOUSING UNITS

In most traffic models, one or more of the land use categories are based on either population or housing units. Some models use a combination of both. For the Skagit County-wide Traffic Model, housing units broken down by single family and multi-family units were used rather than population. This was also the case for the Anacortes and Sedro-Woolley models. On the other hand, the Burlington and Mount Vernon models used population. Thus, the population data from the Burlington and Mount Vernon models had to be converted into housing units in order for the data to be utilized in the County-wide model.

1. Base Year

For the small cities and towns, and for rural Skagit County, the 1990 Census of Population and Housing was used as a starting point for the base year housing unit data. Building permits from 1990 through 1993 were added to give the 1993 base year total for those areas.

For the four largest cities that produced their own traffic models, each used surveys to determine their base year housing/population data. As mentioned above, the city data was digitally transferred into the County-wide model. For Mount Vernon, the population data was converted into housing units during the transfer process through the use of a population per household factor taken from the 1990 Census. For Burlington, their planning staff prepared housing unit figures by TAZ for the County's use.

2. Forecasts

A typical approach to produce county-wide land use growth assumptions would be to go through an interagency forecasting effort.

This effort would first produce county-wide totals. Then these totals would be allocated to the jurisdictions by the group. Finally, each jurisdiction would disaggregate its agreed upon totals to small areas (including TAZs). This was the approach used to produce the population forecasts and subsequently housing unit forecasts which were included in the Skagit County-wide Traffic Model.

The GMA requires that the UGA boundaries in each county, and the city and county plans be developed to accommodate the 20 year county population forecasts prepared by the State Office of Financial Management (OFM). In effect, the OFM forecasts are to be the basis for the land use plans and the transportation elements. In Skagit County, there was general agreement among the various jurisdictions that the OFM forecasts for Skagit County were unreasonably low. (Some also felt that they were based on a very weak methodology.) At that time, a consultant firm, Economic and Engineering Services (EES) was doing county-wide forecasts as a part of a comprehensive water distribution study in Skagit County. The Skagit Council of Governments (SCOG) hired EES to do additional work in the disaggregation of the forecasts to UGAs and to smaller areas. The result of the EES work was a set of forecasts (out 20 years and beyond) not only for County and UGA totals, but also down to the census block level. These forecasts were used to differing degrees by each of the cities for the population and housing unit forecasts.

Historically, about half of the population and housing in Skagit County has gone in the unincorporated area. But if we consider the preliminary UGA boundaries as the urban/rural boundaries, only about one-third of the County's population and housing was in the rural area at the time these forecasts were done. As a part of the preliminary designation of UGAs, the County and cities agreed that the land use plans of the jurisdictions should reflect a future population and housing growth that reflects an 80% urban, 20% rural distribution.

To summarize, the general land use assumptions for housing and population is that Skagit County's growth generally follows the EES forecasts and the 1996 OFM forecasts, and the Urban/Rural breakdown reflects a 80/20 split. Finally, the rural development reflects the "urban communities and rural villages" alternative from the EIS for the Skagit County Comprehensive Plan.

C. EMPLOYMENT

1. Base Year

The base year employment data used in the Skagit County-wide Traffic Model came from a inter-jurisdictional coordinated data development effort using State of Washington Employment Security Department employment data. The jurisdictions involved were Mount Vernon, Burlington, Sedro-Woolley, Anacortes, and Skagit County .The involvement of Anacortes was directly beneficial only to the regional model since Anacortes had already completed its modeling work prior to this coordinated effort. Since the small towns and cities as well as the Indian Tribes did not do traffic modeling for GMA, their employment data was handled through the County's efforts.

The Employment Security Department keeps detailed monthly data on each employer in the state covered by unemployment insurance. This data includes employer address, number of employees, and the Standard Industrial Classification (SIC) code. Because of confidentiality requirements, the Employment Security does not give out detailed records from its employer data base. However, it does have a process for local jurisdictions, consultants, and the public to receive some of its data for study purposes. One of the most prevalent outside uses of this data is in traffic modeling.

In cooperation with the Employment Security Department, the following coordinated process was set up to secure base year employment data for four of the five traffic models being developed by jurisdictions in Skagit County. (Again, the Anacortes data was used only for the County-wide model.)

a. Employment Security created a list of employer addresses in Skagit County and sent it in computerized form to Skagit County staff. This list did not include company name.

b. Skagit County staff divided the County employer list into five files based on zip code. These were Mount Vernon, Burlington, Sedro- Woolley, Anacortes, and the remainder of the County. The four city files were sent to the four respective cities.

c. The four cities plus the County (for the remainder of the County) coded a TAZ number (and, in some cases, Block Numbering Area or BNA number) to each address in their file. These files were then returned to Employment Security staff for processing.

d. The four cities and the County each specified to Employment Security staff the SIC groupings to use for employment summaries. Some coordination among jurisdictions was made on these SIC groupings. (For the County, the data was broken down into Manufacturing/ Industrial, Wholesale/Retail, Health Services, Other Services, and Government.)

e. Employment Security staff then did a computer match with the full employer data base, and produced printouts of BNA and TAZ employment totals by the requested employment (SIC) groups. These printouts were then sent to the jurisdictions to be used as the base year employment for the models.

The data that came back from Employment Security had some restrictions in its usability. Because of confidentiality requirements, much of the TAZ data, when broken down by SIC group, was suppressed (not shown). Because of this suppression and the sequence of suppression, some data was lost in Burlington and Sedro-Woolley. (No data was lost in Mount Vernon, Anacortes or the rest of the County.)

With the data from Employment Security and other sources and assumptions, the cities developed base year employment data for their models. (The Anacortes data came in the County-wide model format directly from Employment Security.) For the County-wide model, County staff took the base year data from the cities, made a number of adjustments to ensure consistency, and added the rural employment data. (See Appendix F for additional details on base year employment.)

2. Forecasts

As a part of the SCOG's development of an Overall Economic Development Plan (OEDP), a consultant doing the work was required to do 20-year Employment forecasts for the County broken down by a number of SIC groupings. The County was fortunate that this effort, which was to be the basis for the Economic Development Element of the Comprehensive Plan, was taking place concurrent with the development of its Transportation Element. Since all the cities were hurrying to complete their GMA transportation planning efforts and were ahead of this OEDP work, it was not possible to have a formal employment forecast disaggregation process for the cities. Each produced employment forecasts independently.

In order to produce the TAZ level employment forecasts required for the County-wide model, the process was to start with the cities' forecasts, make a number of appropriate adjustments (see below), subtract the city totals from the OEDP's County-wide forecasts, and produce a residual. Adjustments were then be made to the residual in order to produce a reasonable number for the rural area forecast. Finally, this adjusted residual was allocated to rural TAZs based on the land use plan. Fortunately, the residual did not have to be greatly adjusted to produce reasonable results.

The "appropriate adjustments" mentioned above relate to two factors: 1) carrying forward the base year adjustments, and 2) adjusting for different forecast years. To handle the first, the forecast percentage growth for the specific SIC groupings from the cities' models were applied to the cities' adjusted base year data (rather than original base year data). To handle the second, a temporal adjustment was made to factor up the data from years 2010 and 2012 to the County-wide model future year of 2014. Again, the growth rates projected by the cities were not changed.

After all the adjustments to the forecasts were completed, the County-wide forecasts used for the model did not quite agree with the employment control totals from the OEDP. However, the differences were minor.